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## REMARKS

This submission is responsive to the Office Action dated October 12, 2006. Applicant has not amended the claims by way of this submission. Claims 50-57 remain pending.

### Claim Rejections Under 35 U.S.C. § 103

The Office Action rejected claims 50-51 and 55 under 35 U.S.C. § 103(a) as being unpatentable over Brune (US 5,984,875) in view of Steffel et al. (US 4,326,535). The Office Action also rejected claim 52 under 35 U.S.C. § 103(a) as being unpatentable over Brune and Steffel et al., in view of Miyawaki et al. (US 5,697,384). In addition, the Office Action rejected claims 53-54 and 56-57 under 35 U.S.C. § 103(a) as being unpatentable over Brune and Steffel et al., in view of Miyawaki et al., and further in view of Kumar et al. (US 6,416,471).

Applicant respectfully traverses these rejections. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

For example, independent claim 50 requires a plurality of sensors adapted to be implanted in the body of a patient, wherein each of the plurality of sensors periodically measures a physiological parameter indicative of gastroesophageal reflux, and wherein each of the plurality of sensors periodically transmits a signal indicative of the physiological parameter that includes an identifier that is indicative of the sensor from which the signal is sent. None of the prior art cited in the Office Action, alone or considered in combination, discloses or suggests these requirements of independent claim 50.

Applicant disagrees with the conclusion of obviousness for a number of reasons. First, neither Steffel et al., nor Brune, discloses or suggests a plurality of sensors adapted to be implanted in the body of a patient. Second, even if the systems of Brune and Steffel were combined, the resulting system would not anticipate the claimed invention. Third, there is no motivation to combine the teachings of Brune and Steffel.

The Office Action again argued that Steffel et al. discloses a plurality of sensors adapted to be implanted in the body of the patient. More particularly, the Office Action argued that pH electrodes 16 and 17 are each a sensor implantable by insertion through the patient's nasal passage and into the esophagus that transmits a signal to a receiver 32. Applicant respectfully suggests that the Examiner has misinterpreted the teachings of Steffel et al.

First, electrodes 16 and 17, along with pH meter 15, are components of a single pH sensor. Electrode 17 is the "reference pH electrode."[1] Thus, the voltage difference between pH electrode 16 and reference pH electrode 17 provides a single signal indicative of pH, which is transmitted (after conversion) to ECG signal receiver 32.[2] Thus, electrodes 16 and 17 are not a plurality of sensors, do not each periodically measure a physiological parameter, and do not each transmit a respective signal to a receiver, as required by independent claim 50.

Moreover, reference pH electrode 17 is not adapted to be implanted in the patient. Instead, as clearly depicted in FIG. 1 of Steffel et al., reference pH electrode 17 is attached to the skin of the patient.[3] Thus, even if electrodes 16 and 17 were incorrectly interpreted to be separate sensors, Steffel et al. would still fail to disclose or suggest a plurality of sensors adapted to be implanted in the body of the patient, as required by independent claim 50.

Brune also fails to teach or suggest a plurality of sensors adapted to be implanted in the body of a patient. The Office Action argued that the bolus 2 described by Brune was an implantable sensor that transmits a signal to a receiver 4 within the meaning of claim 50. Brune only suggests that a single bolus may be implanted in each animal. In particular, Brune discloses that "the identification code can be field programmed into the ingestible bolus 2 so that a unique identification number can be assigned to a multiplicity of ingestible boluses, each of which can be administered to different animals."[4] Multiple boluses are suggested to be used in multiple animals, and there is no description or suggestion to use more than one bolus in one animal. Therefore, Brune fails to suggest a plurality of sensors adapted to be implanted in the body of a patient.

None of the references discloses a plurality of sensors adapted to be implanted in the body of a patient, wherein each of the plurality of sensors periodically measures a physiological parameter indicative of gastroesophageal reflux, and wherein each of the plurality of sensors periodically transmits a signal indicative of the physiological parameter that includes an identifier that is indicative of the sensor from which the signal is sent. Thus, even when combined, these references would fail to meet to this requirement of independent claim 50.

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[1] Steffel et al., Col. 3, ln. 36.
[2] Steffel et al., Col. 3, ll. 37-40.
[3] *See also* Steffel et al., Col. 3, ll. 49-53.
[4] Brune, Col. 5, ll., 52-58.

Further, even if Steffel et al. were incorrectly considered to suggest two implantable sensors adapted to be implanted in the body of a patient, wherein each of the plurality of sensors periodically measures a physiological parameter indicative of gastroesophageal reflux, and wherein each of the plurality of sensors periodically transmits a signal indicative of the physiological parameter, a person of ordinary skill would still have avoided modification of Brune to include this feature. One of ordinary skill in the art would not have been motivated to include two pH sensors to generate two pH signals within a single, small bolus as taught by Brune. Moreover, Brune teaches away from use of more than one bolus in a single animal.[5] Thus, a person of ordinary skill would not have considered modifying Brune to include two boluses with respective pH sensors.

Dependent claims 51-57 are allowable for at least the reasons put forth above with respect to independent claim 50, from which they depend. In addition, dependent claims 51-57 include additional elements that are not anticipated by any combination of Brune, Steffel, Miyawaki or Kumar. For example, no prior art combination meets the elements of claim 53 which include that the microprocessor of each of the sensors periodically enables the pH monitor of the respective sensor during a first interval of each measurement cycle to obtain the pH signal and then disables the pH monitor during a second interval.

In support of the rejection of claim 53, the Examiner characterized Brune and Steffel as disclosing a system for measuring physiological parameters indicative of gastroesophageal reflux including a plurality of sensors, but Brune and Steffel fail to disclose a microprocessor or separate intervals for sampling and transmitting signal data from the pH monitor receiver. The Examiner cited Kumar, however, as teaching that sensor 62 is active during a measurement cycle, with the first interval being defined as collection of data by sensors 62 and processor 70 conditioning the data and storing the data to memory 80. On this basis, the Examiner concluded that it would have been obvious to modify Brune in view of Steffel with the Kumar system to include sensor 62 is active during a measurement cycle, with the first interval being defined as collection of data by sensors 62 and processor 70 conditioning the data and storing the data to memory 80. The Examiner reasoned that such a modification would have been desirable in order to provide a processor for executing a separate measuring cycle and transmitting of data.

[5] Brune, Col. 2, ll. 19-25.

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Applicant disagrees with the conclusion of obviousness. Kumar does not suggest a first interval of each measurement cycle to obtain the pH signal and then disabling the pH monitor during a second interval.

Kumar fails to teach or suggest that the microprocessor of each of the sensors periodically enables the pH monitor of the respective sensor during a first interval of each measurement cycle to obtain the pH signal and then disables the pH monitor during a second interval. Kumar only discloses that "full waveform ECG data is collected at a 250 Hz sampling frequency"[6] and "ASIC 64 in conjunction with one of the micro-controllers 66 continuously transmits the data including vital signs data over communications link 65 to signal transfer unit 20."[7] However, there is no disclosure that indicates a first and second interval of a measurement cycle. In addition, there is no suggestion that a monitor, or even a pH monitor, is disabled during a second interval. Use of a 250 Hz sampling frequency during a time of continuous monitoring is not the same as or suggestive of periods in which a monitor is active or disabled.

## CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

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[6] Kumar et al., Col. 8, l. 62.
[7] Kumar et al., Col. 15, ll. 5-8 (emphasis added).